08:18:16 OCA PAD AMENDMENT - PROJECT HEADER INFORMATION 09/19/94

Active

Project #: C-36-699 Cost share #: Rev #: 2
Center # : 10/24-6-R7566-0A0 Center shr #: OCA file #:
Work type : RES
Contract#: 92-CSE-420185-GT Mod #: 2 Document : SUBCONT
Prime #: CCR-9203319 Contract entity: GTRC

Subprojects ? : N CFDA: 47.070
Main project #: PE #: N/A47.

Project unit: COMPUTING Unit code: 02.010.300
Project director(s):
APPELBE W F MSE (404)894-6187

Sponsor/division names: AUBURN UNIVERSITY / AUBURN, ALABAMA
Sponsor/division codes: 400 / 101

Award period: 920615 to 960531 (performance) 960731 (reports)

Sponsor amount	New this change	Total to date
Contract value	0.00	80,002.00
Funded	27,605.00	80,002.00
Cost sharing amount		0.00

Does subcontracting plan apply ?: N

Title: PSST: PARALLELIZING SCALABLE SOFTWARE TRANSFORMATIONS

PROJECT ADMINISTRATION DATA

OCA contact: Ina R. Lashley 894-4820

Sponsor technical contact

DR. CAROLYN L. MCCREARY
(205)844-6307

AUBURN UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE &
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107 DUNSTAN HALL
AUBURN UNIVERSITY, AL 36849

Sponsor issuing office

MS. OLIVIA H. POPE, DIRECTOR
(205)844-4438

AUBURN UNIVERSITY
CONTRACTS AND GRANTS ADMINISTRATION
307 SAMFORD HALL
AUBURN UNIVERSITY, AL 36849-5112
(DIANA L. HYDE); FAX (205) 844-5953

Security class (U,C,S,TS) : U ONR resident rep. is ACO (Y/N): N
Defense priority rating : N/A N/A supplemental sheet
Equipment title vests with: Sponsor GIT X

Administrative comments -
MOD 2 EXTENDS PERIOD OF PERFORMANCE TO 5/31/96 AND ADDS FINAL INCREMENT/
THIRD YEAR FUNDING OF $27605. THIS SUBCONTRACT IS NOW FULLY FUNDED.

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

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NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 01/10/97

Project No. C-36-699_____ Center No. 10/24-6-R7566-0A0_

Project Director APPELBE W F_____ School/Lab COMPUTING_____

Sponsor AUBURN UNIVERSITY/AUBURN, ALABAMA_____

Contract/Grant No. 92-CSE-420185-GT_____ Contract Entity GTRC

Prime Contract No. CCR-9203319_____

Title PSST: PARALLELIZING SCALABLE SOFTWARE TRANSFORMATIONS_____

Effective Completion Date 960531 (Performance) 960715 (Reports)

Closeout Actions Required:	Y/N	Date Submitted
Final Invoice or Copy of Final Invoice	Y	960619
Final Report of Inventions and/or Subcontracts	N	_____
Government Property Inventory & Related Certificate	N	_____
Classified Material Certificate	N	_____
Release and Assignment	Y	960703
Other _____	N	_____

Comments_____
_____

Subproject Under Main Project No. _____

Continues Project No. _____

Distribution Required:

Project Director	Y
Administrative Network Representative	Y
GTRI Accounting/Grants and Contracts	Y
Procurement/Supply Services	Y
Research Property Managment	Y
Research Security Services	N
Reports Coordinator (OCA)	Y
GTRC	Y
Project File	Y
Other _____	N
_____	N

C-36-699

1, 2

ANNUAL PROGRESS REPORTS C-36-699

(July 1993 - July 1994)

During this period I supported one research assisitant upon the grant (alternately Charles Hardnett and Srinivas Doddapeneni). The principal activities were support and enhancement of the PAT parallel programming toolkit, including:

- implementation of the Omega depedence test (Hardnett) in PAT
- implementation of the IVD (intervariable dependence) graph, and graph transformations in PAT, together with loop code transformations
- parallel code generation for the KSR-1

As a result of the grant, we demonstrated PAT at SuperComputing '93, in November in Portland and also published papers on the results including:

Appelbe, W.F., Hardnett, C., and Doddapaneni, S.,
" A New Algorithm for Global Optimization for Parallelism and Locality",
7th. Workshop on Languages and Compilers for Parallel Computing,
Cornell, August 1994.

Appelbe, W.F., and Lakshmanan, B.,
"Optimizing Parallel Programs Using Affinity Regions"
1993 International Conference On Parallel Processing,
St. Charles, Illinois, August 1993.

Appelbe, W.F., and Smith, K.,
"Determining Transformation Sequences for Loop Parallelization"
6th. Workshop on Languages and Compilers for Parallel Computing,
Portland, Oregon, August, 1993.
1992 June.

(July 1992 - July 1993)

During this period I supported one research assisitant upon the grant (alternately Bala Lakshmanan and Chris Hutto)..
The principal activities were support and enhancement of the PAT parallel programming toolkit, including:

- completing the recoding of Pat's data structures from C to C++
- implementation of a timing tool and Motif GUI for PAT
- parallel code generation for the KSR-1

As a result of the grant, we demonstrated PAT at SuperComputing '92, in November in Minneapolis and also published papers on the results including:

Appelbe, W.F., and Smith, K.,
"Determining Transformation Sequences for Loop Parallelization"
5th. Workshop on Languages and Compilers for Parallel Computing,
Yale University, August 3-5, 1992.

C-36-699
#3

Annual Progress Report
6/15/94 - 5/31/95
C36-699 Sponsor: Auburn University
PI: William Appelbe

In 1995 we release a new version of the tool Pat to Carolyn McCreary at Auburn. The release was built by Charles Hardnett. We also commenced implementation of a new compiler tool, GiL. GiL, "Gcc in Lisp" is a Scheme environment for running gcc, that enables the intermediate code of gcc to be extracted, manipulated, and transformed in a Lisp environment. The goal of gcc is to simplify prototyping advanced compiler optimizations and code generation algorithms.

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#4

C36-699 Appelbe Auburn Annual Prog Report 7/31/96

This was the final year of this grant. On request from Auburn, we made a number of improvements to the PAT toolkit for their needs. In addition, several students were funded to work on our next generation toolkit: Gil (see http://www.cc.gatech.edu/GiL/ for a complete description).